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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,805	06/07/2005	Matthew Francis	MERCK-3033	6490

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EXAMINER	
WU, SHEAN CHIU	
ART UNIT	PAPER NUMBER
1795	
MAIL DATE	DELIVERY MODE
03/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,805	FRANCIS ET AL.	
	Examiner	Art Unit	
	Shean C. Wu	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5 and 7-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5 and 7-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-2, 4-5 and 7-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The newly amended claims are broader than the original claimss because the nematic component in the specification requires containing a 3,4,5-trifluorophenyl group (i.e., the Y^1, X^0 and Y^0 =F, see page 15, lines 25-31). The newly amended claim does not have such limitation.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim is vague because the compound of formula I is broader than the compounds of formulae I1-I3. The word "further" should be inserted before "nematic component" and different from the compounds of formulae I1-I3.

3. Please provide the references 011, 014 and 015 cited in IDS filed on 6/7/05 for the consideration, which are missing from the copies submitted on 12/14/07. The reference 014 is EP 404081 not EP 0404081.

Claim Rejections - 35 USC § 103

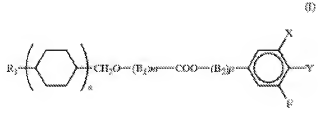
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6-14 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US 6,149,990).

The reference discloses a compound represented by the following general formula (I), a liquid crystal composition comprising the same, and a liquid crystal element using this liquid crystal composition.

(I)



(wherein B_1 and B_2 represent independently a trans-1,4-cyclohexylene group or a 1,4-phenylene group wherein at least one hydrogen atom on the six-membered ring is optionally substituted by a halogen atom, Y represents a halogen-substituted alkyl group having 1 to 3 carbon atoms, a halogen-substituted alkoxy group having 1 to 3 carbon atoms, a cyano group, a fluorine atom or a chlorine atom, X represents a fluorine atom, a chlorine atom or a hydrogen atom, R_1 represents an alkyl group having 1 to 10 carbon atoms or an alkoxy group having 1 to 10 carbon atoms, n and m represent independently 1 or 2 and p represents 0 or 1.) The compound of the reference invention exhibits a large dielectric anisotropy, low threshold voltage, and favorable temperature-dependency of

threshold voltage, as well as a favorable miscibility with a known liquid crystal compound, and therefore a liquid crystal composition comprising the compound can provide low voltage-operable liquid crystal display elements. The preferable compounds are disclosed on col. 8 (see formulae (I-1) to (I-8)). The reference further teaches that the additional compounds of formulae (II)-(IV) and (VII) containing 3, 4, 5- trifluorophenyl group are suitable as components for liquid crystal composition (see columns 3-4, 14-24 and 28). The compounds represented by the formulas (II) to (IV) show positive dielectric anisotropy and have very good heat stability. Thus these compounds are essential to prepare a liquid crystal composition suitable for AM (active matrix)-LCD (TFT), which requires a large voltage holding ratio and high reliability (see col. 24, lines 31-37). The dye can be added to the medium is disclosed on col. 31, lines 20-24. The reference further teaches that the chiral dopant also can be added to induce spiral structure (helical pitch) of the liquid crystal so as to adjust a desired degree of twist angle and to avoid reverse twist. The chiral compounds are disclosed on col. 85. The reference Examples 17 and 25 comprise 100% compounds having a 3, 4, 5- trifluorophenyl group. The Example 37 comprising HHBB(F,F)-F reads on the present claim 7.

Also, see Examples 33-34 and 38, which have at least 75% of the present formulae I1-I3.

The reference differs from the reference in that the reference does not show the helical pitch of the liquid crystal medium $\leq 1\mu m$. Because the reference compositions read on the present claims and the chiral compounds can be added to induce the helical pitch, therefore, it would have been obvious to those skilled in the art to utilize the

reference teaching by adjusting the chiral compound in the medium to arrive at the claimed invention.

With respect to claims 12 and 14, it would have been obvious to those skilled in the art by adding a chiral compound into the reference medium to have a chiral nematic property and used in active-matrix reflective cholesteric liquid crystal display.

With respect to claim 16, the compound having a terminal group OCF_3 is also disclosed by the reference (see the reference Examples having OCF_3). Therefore, it would have been obvious to those skilled in the art add such compound to the medium to arrive at the claimed invention.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US 6,149,990) as applied to claims 1-4, 6-14 and 16-22 above, and further in view of US 2002/0,003,827.

The reference (US '990) teaching has been previously set forth in the section above. The reference differs from the present invention in that the present invention has an active laser material and application thereof by using the LC medium of the present invention. Because the cholesteric liquid crystal (CLC) medium can be derived from the reference medium and CLC medium used for laser material and its application is known in the art (see section [0067] and claims 21-22 of US '827), it would have been obvious to those skilled in the art to utilize the reference CLC medium for laser material and its application.

Response to Arguments

7. Applicant's arguments with respect to claims 1-2, 4-5 and 7-22 have been considered but are moot in view of the new grounds of rejection. The previous rejections in the final rejection are still maintained. The terminal disclaimer filed 12/14/07 overcomes the ODP rejection over US '268. The Examples 33-34 and 38 of US '990 read on the present claim 1.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 10:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shean C Wu/
Primary Examiner, Art Unit 1795

scw